Attachment 3

Stormwater Flood Management Grant Proposal City of Palmdale Work Plan

Attachment 3 consists of the following items:

- ✓ **Work Plan.** Attachment 3 contains detailed information regarding the tasks that were and will be performed for the proposed project.

Introduction

The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project (Amargosa Project) is proposed by the City of Palmdale (City), an accredited agency of the American Public Works Association (APWA)[1]. The Amargosa Project proposes to provide flood protection by confining Amargosa Creek stormwater flows within channel berms that prevent erosion damage to nearby utilities, local streets, and eliminating a public safety hazard. The project also provides the City with additional water supplies from increased groundwater recharge, native habitat restoration, and additional community/park areas within the Amargosa Creek Watershed. The bottom of the channel will remain as a soft, natural surface. An overall view of the Amargosa Project is shown in Figures 3-3 through 3-10.

Flood Protection

The flood protection berms consist of soilcrete embankments between 20th Street West and 25th Street West that will protect both sides of the creek from further erosion and property damage, including:

- 30-inch diameter sewer trunk line near Elizabeth Lake Road
- 24-inch diameter water supply pipe
- 6-inch diameter natural gas pipe
- Future 20th Street Bridge
- Potential safety hazards posed to pedestrians along Amargosa Creek and nearby streets

Some flood protection will also be provided by the recharge facilities, which include diversion structures and spreading basins with a maximum capacity of 100 cubic feet per second (cfs) during storm events. In addition, a 500-foot stormwater conveyance pipe will be constructed to connect the 25th Street West storm culvert directly to the recharge basins to prevent the continued formation of an existing 10-foot deep natural channel that poses an ongoing threat to pedestrians.

Water Supply

The recharge component of the Amargosa Project includes the construction of eight basins (six "off-channel" and two "in-channel") to recharge groundwater within an area of about 20 acres along Amargosa Creek. The project will use two sources of water to recharge the underlying aquifer: 1) untreated State

[1] Accreditation is based on a peer reviewed and approved self-assessment based on the Best Practices Manual as prepared by the APWA. The complete self-assessment represents an agency-wide review of management and operation policies and practices as compared to nationally recognized practices as developed by the APWA. The City's self-assessment covered over 430 best management practices. APWA accreditation is the recognition that the City subscribes to the concept of continuous improvement and has conducted an in-depth self assessment of policies, procedures and practices to achieve conformance with a recognized body of management practices.

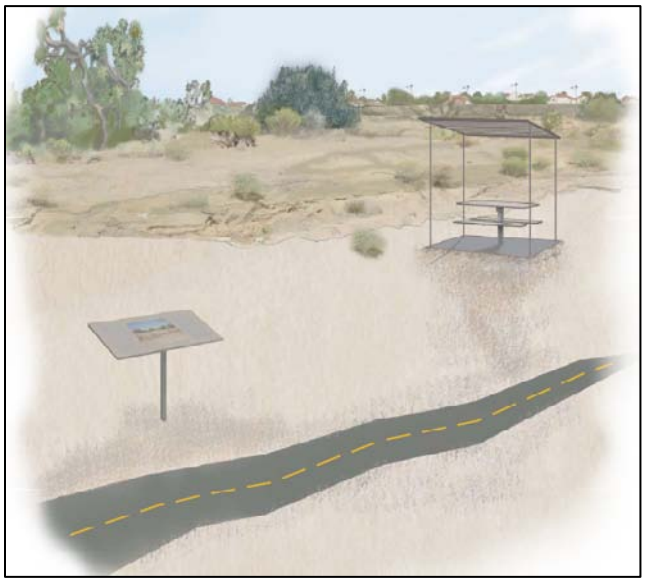
Water Project (SWP) water and 2) stormwater runoff from the Amargosa Creek Watershed. The project is ideally located just downstream of the California Aqueduct where only minimal infrastructure would be necessary to convey SWP water from the aqueduct to the recharge basins. Assuming recharge basins would be out of operation during the summer months when SWP water and stormwater would not be available, it is anticipated the project would recharge 14,600 to 53,600 acre-feet per year (AFY) of SWP water depending on available supply, with an average of approximately 24,300 AFY[2]. Stormwater collection and conveyance facilities would be installed to direct existing upslope municipal stormwater flows into the proposed recharge basins in Amargosa Creek. It is anticipated the project will capture and recharge approximately 400 AFY of stormwater, depending on annual precipitation and rainfall patterns.

The proposed recharge improvements include: 1) constructing two small push-up check dams in the Amargosa Creek channel to form in-channel recharge areas that promote recharge by reducing flow velocity and expanding the wetted area; 2) constructing six off-channel recharge basins located between 25th Street West and 20th Street West.

Habitat Restoration and Recreational Open Space

Lastly, the project will integrate the recharge facilities with a proposed Nature Park at Amargosa Creek. The project will restore 25 acres of habitat along Amargosa Creek to reestablish Mojave Desert scrub, native vegetation, and wildlife habitat to enhance the biological environment of the area. The proposed restoration efforts will include: 1) removing trash from the site; 2) planting native plants; 3) installing a temporary irrigation system to establish newly planted vegetation; and 4) removing invasive and non-desirable plant species. The restoration area would serve to educate the public regarding water supply infrastructure, urban watershed issues, and native plants and wildlife. The restoration area will include a bike path and footpaths to encourage public access and will include educational storyboards and placards identifying the types of plants and wildlife that are native to the region. The project will also provide footpaths and bike paths for a safe and direct route to and from local schools for existing pedestrian traffic. Figures 3-2 and 3-3 show artist's renderings of the habitat restoration and public recreation components of the project.

Figure 3-1: Rendering of Habitat Overlook, Education Placard, and Bike Path that will be Implemented as Part of the Amargosa Project



[2] Water Resource Evaluation of Amargosa Creek-Prepared for the City of Palmdale, SAIC, July 2009

Figure 3-2: Rendering of Planned Habitat Enhancement with Native Vegetation

Summary

The overall proposed project improvements include: providing improved flood protection within the Amargosa Creek watershed and reducing flood cost damages, expanding the size and capacity of the natural recharge area, developing and preserving an ephemeral stream habitat, and providing foot and bike paths for public recreation.

Goals and Objectives

The City is a participant in the IRWM Plan and the Amargosa Project is one of the identified priority projects that will aid in meeting the Antelope Valley's IRWM Plan goals and objectives. Table 3-1 highlights the Antelope Valley's IRWM Plan goals (and therefore the Amargosa Project goals) along with the respective objectives designed to achieve these goals.

Table 3-1: Antelope Valley IRWM Plan Goals and Objectives

IRWM Plan Objective		Primary IRWM Plan Goals Implemented by Objective		
		Goal 1: Municipal and industrial (M&I) purveyors reliably provide the quantity and the quality of water that will be demanded by a growing population	Goal 2: Satisfy agricultural users' demand for reliable irrigation water supplies at a reasonable cost	Goal 3: Protect and enhance current water resources (including groundwater) and the other environmental resources within the Antelope Valley Region
A	Provide reliable water supply to meet the Antelope Valley Region's expected demand between now and 2035	●	●	
B	Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries	●	●	
C	Stabilize groundwater levels at current conditions		●	●
D	Provide drinking water that meets customer expectations	●		
E	Protect aquifer from contamination	●		●
F	Protect natural streams and recharge areas from contamination	●		●
G	Maximize beneficial use of recycled water	●		
H	Reduce negative impacts of stormwater, urban runoff, and nuisance water			●
I	Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region			●
J	Maintain agricultural land use within the Antelope Valley Region		●	●
K	Meet growing demand for recreational space			●
L	Improve integrated land use planning to support water management	●		●

● IRWM Plan goal targeted by Plan objective

The Amargosa Project will be consistent with ten of twelve Antelope Valley IRWM Plan objectives. Table 3-2 below provides an overview of the Antelope Valley IRWM Plan objectives that are expected to be directly (●) achieved through implementation of the project.

Table 3-2: Contribution to IRWM Plan Objectives

Proposal Projects	Contribution to IRWM Plan Objectives											
	A	B	C	D	E	F	G	H	I	J	K	L
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	●	●	●	●	●	●		●	●		●	●

● achieved through implementation of the Project

This project contributes to the Antelope Valley IRWM Plan objectives in the following ways:

- **Objective A** – *Provide a reliable water supply to meet the Antelope Valley Region's expected demand between now and 2035*: by constructing six off-channel and two in-channel recharge basins to protect groundwater levels to continue to meet the region's water supply needs.
- **Objective B** – *Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries*: by storing SWP water and storm water in the underlying aquifer to continue providing a reliable stream of water supply if future SWP disruptions occur.
- **Objective C** – *Stabilize groundwater levels at current conditions*: by recharging the underlying aquifer and increasing groundwater levels in an area that regionally has the lowest groundwater levels.
- **Objective D** – *Provide drinking water that meets customer expectations*: via percolation and recharge of stormwater and SWP water into the underlying aquifer which serves as a portion of the region's drinking water supply portfolio.
- **Objective E** – *Protect aquifer from contamination*: by capturing and recharging the upper aquifer and reducing the overdraft effects from infiltration of arsenic-laden water from the lower aquifer into the upper aquifer.
- **Objective F** – *Protect natural streams and recharge areas from contamination*: by creating a flood control channel, park and recharge area will help secure the creek habitat with fences, basins, and other appurtenances from off-road vehicles, trash dumping, and other habitat destroying activities. The footpaths and bike paths will also provide a safe route to and from the local schools and, in turn, protect the local environment.
- **Objective H** – *Reduce negative impacts of stormwater, urban runoff, and nuisance water*: by channelizing and confining flows within Amargosa Creek to prevent flooding of roads. Additionally, the project will reduce downstream erosion and sedimentation during storm events.
- **Objective I** – *Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region*: by designating 25 acres as native habitat and conservation area that would restore previously disturbed habitat by removing non-native vegetation, restoring native Mojave Desert Scrub, riparian vegetation, and wildlife habitat.
- **Objective K** – *Meet growing demand for recreational space*: by creating a 38-acre community nature park within the boundaries of the project site containing multi-use pathways, picnic tables, interpretive plaques, educational opportunities, and habitat enhancement/restoration areas.
- **Objective L** – *Improve integrated land use planning to support water management*: by implementing a project that will adaptively manage multiple local water supply sources such as imported water, stormwater, and groundwater.

In summary, the Amargosa Project's primary objectives include: reducing negative impacts associated with stormwater runoff, reducing erosion and sedimentation, increasing ground water recharge, providing a reliable water supply for future use, enhancing and protecting the environment and local habitat, and creating recreational open space for the local community.

Purpose and Need

The Amargosa Project is primarily needed to prevent flood-induced erosion along Amargosa Creek and reduce flood cost damages to utilities and streets as well as increase water supply reliability, restore native habitat conservation area, and recreational space. With implementation of the project, increased flood protection will reduce the risk of damage to utilities and streets. Additionally, the Antelope Valley's groundwater basin is the most depressed within the heart of the Amargosa Creek; therefore, the project is needed for groundwater recharge to supplement groundwater levels in the underlying aquifer.

The purpose of the project is to channelize a portion of the Amargosa Creek, construct eight recharge basins, and expand habitat protection and recreational space to prevent flood damages, provide a reliable water supply to meet the Antelope Valley Region's future water demand, and provide habitat protection and recreational public space.

Project List/Project Specifics

Table 3-3 provides an abstract of the proposed project, the current status of the project, implementing agencies (as applicable), the site specific geographic location, and the project's function with relation to other stormwater conveyance systems.

Table 3-3: Amargosa Project Specifics

Project	Description	
Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project	*Abstract:*	*The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project is proposed by the City of Palmdale. The proposed project will improve flood protection within the Amargosa Creek Watershed by confining a portion of the Amargosa Creek within channel berms with a soft bottom. The project will additionally use untreated State Water Project (SWP) water and stormwater to recharge the most depressed area of the largest underlying groundwater aquifer of the Antelope Valley. Lastly, this project will increase the amount of protected natural habitat. The proposed project improvements include: prevent erosion damage by channelizing portions of Amargosa Creek, expanding the size and capacity of the spreading ground of the natural recharge area, and developing and preserving an ephemeral stream habitat.*
	Status:	Pre-design Phase
	Implementing Agency:	City of Palmdale
	Location:	North side of Elizabeth Lake Road between 25th Street West and 20th Street West
	Stormwater Conveyance:	The project will extend stormwater conveyance into the Amargosa Creek recharge basins and create stormwater collection to reduce stormwater flows downstream and reduce the potential flood damage to utilities, homes and businesses.
	State Plan for Flood Control:	Not applicable.

Project Partners

The Amargosa Project is being solely proposed by the City of Palmdale.

Integrated Elements of Project

The project integrates with other Antelope Valley IRWMP projects through meeting the following IRWMP region goals:

- **Goal 1** - Municipal and industrial (M&I) purveyors reliably providing the quantity and the quality of water that will be demanded by a growing population
- **Goal 2** - Satisfying agricultural users' demand for reliable irrigation water supplies at a reasonable cost
- **Goal 3 -** Protecting and enhancing current water resources (including groundwater) and the other environmental resources within the Antelope Valley Region.

Regional and Project Maps

A site map showing the Amargosa Project geographic location along with the Amargosa Creek watershed and Antelope Valley groundwater basin can be found in Figure 3-4. Figure 3-5 contains a map of the project location and all flood protection infrastructure to be constructed as part of the project. Figures 3-6 and 3-7 are maps of the project site and groundwater recharge facilities that will be constructed as part of the project. Figures 3-8 and 3-9 are detailed maps of the proposed Amargosa Creek Nature Park.

Figure 3-33: Amargosa Project Regional Map

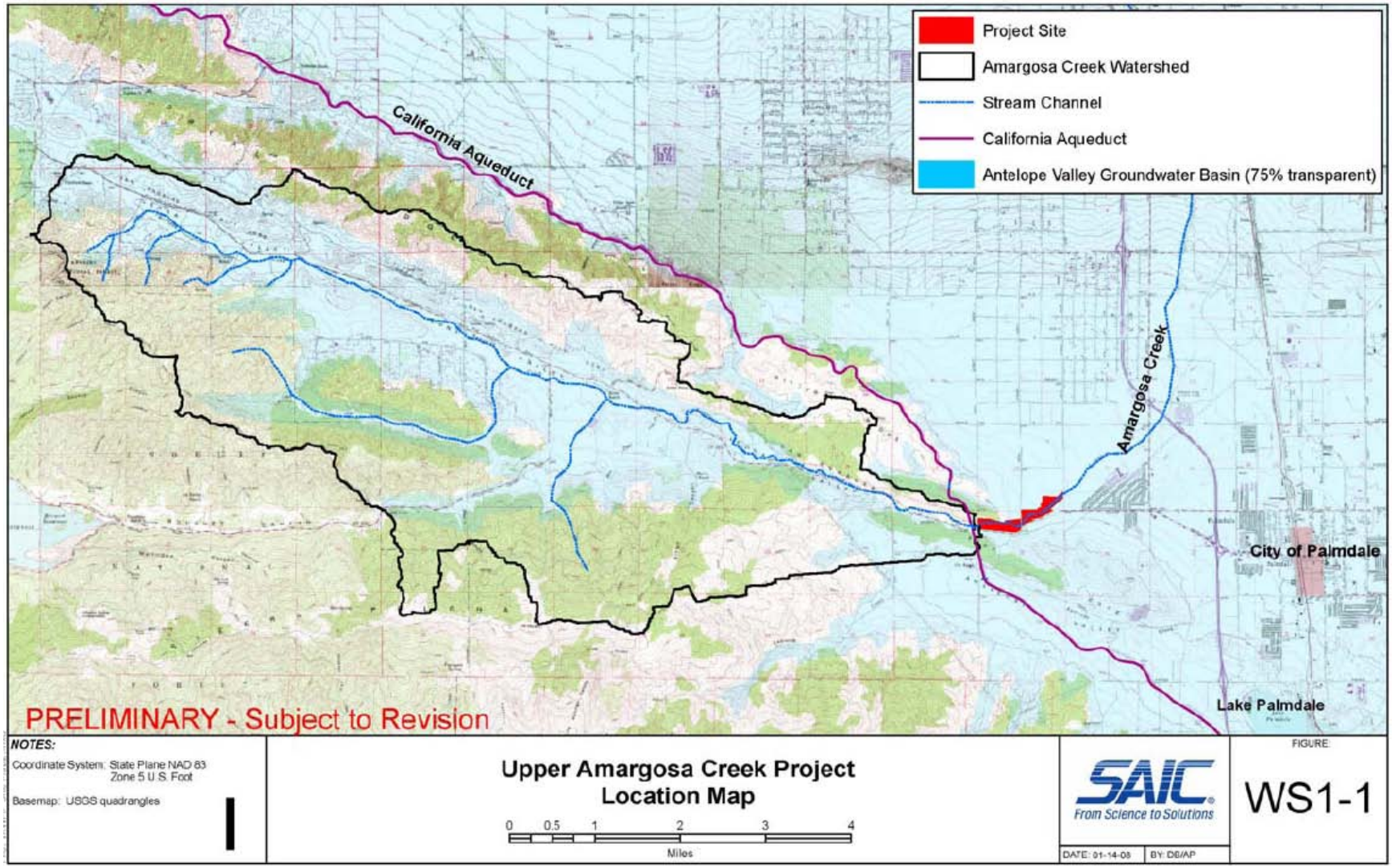


Figure 3-4: Amargosa Project Flood Protection Components

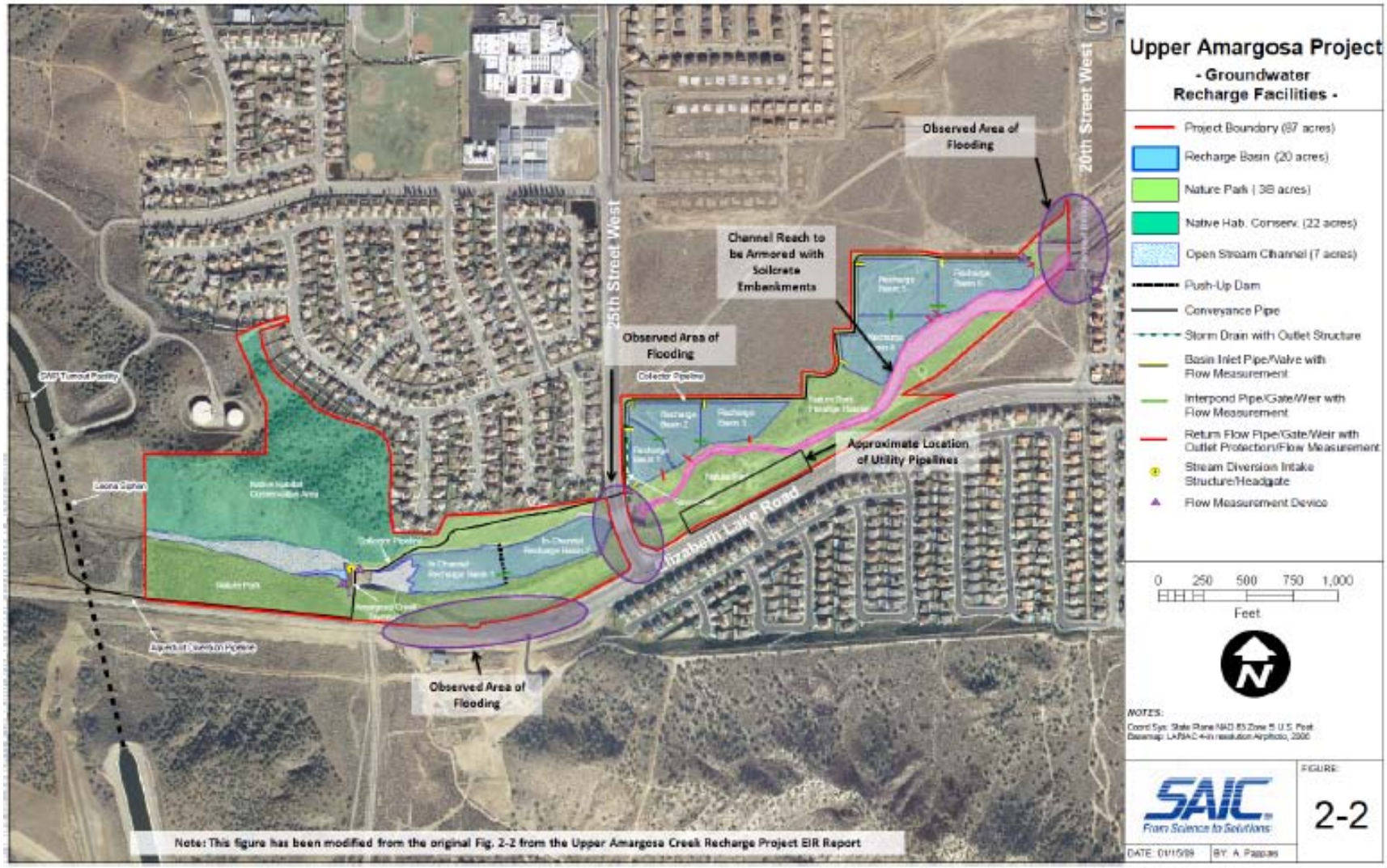


Figure 3-5: Amargosa Project Groundwater Recharge Components

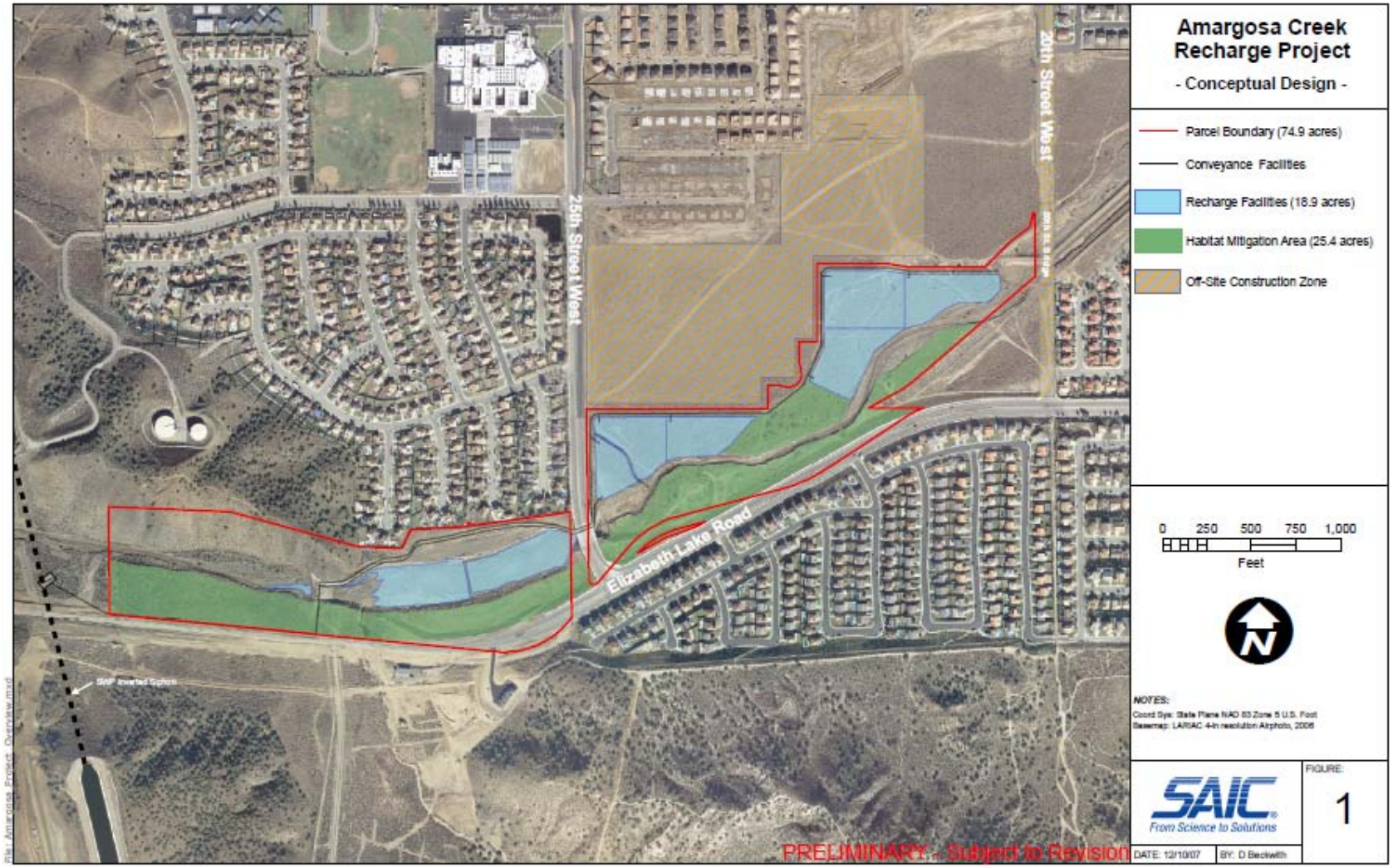


Figure 3-8: Amargosa Project Water Resource Infrastructure

Figure 3-9: Amargosa Creek Nature Park

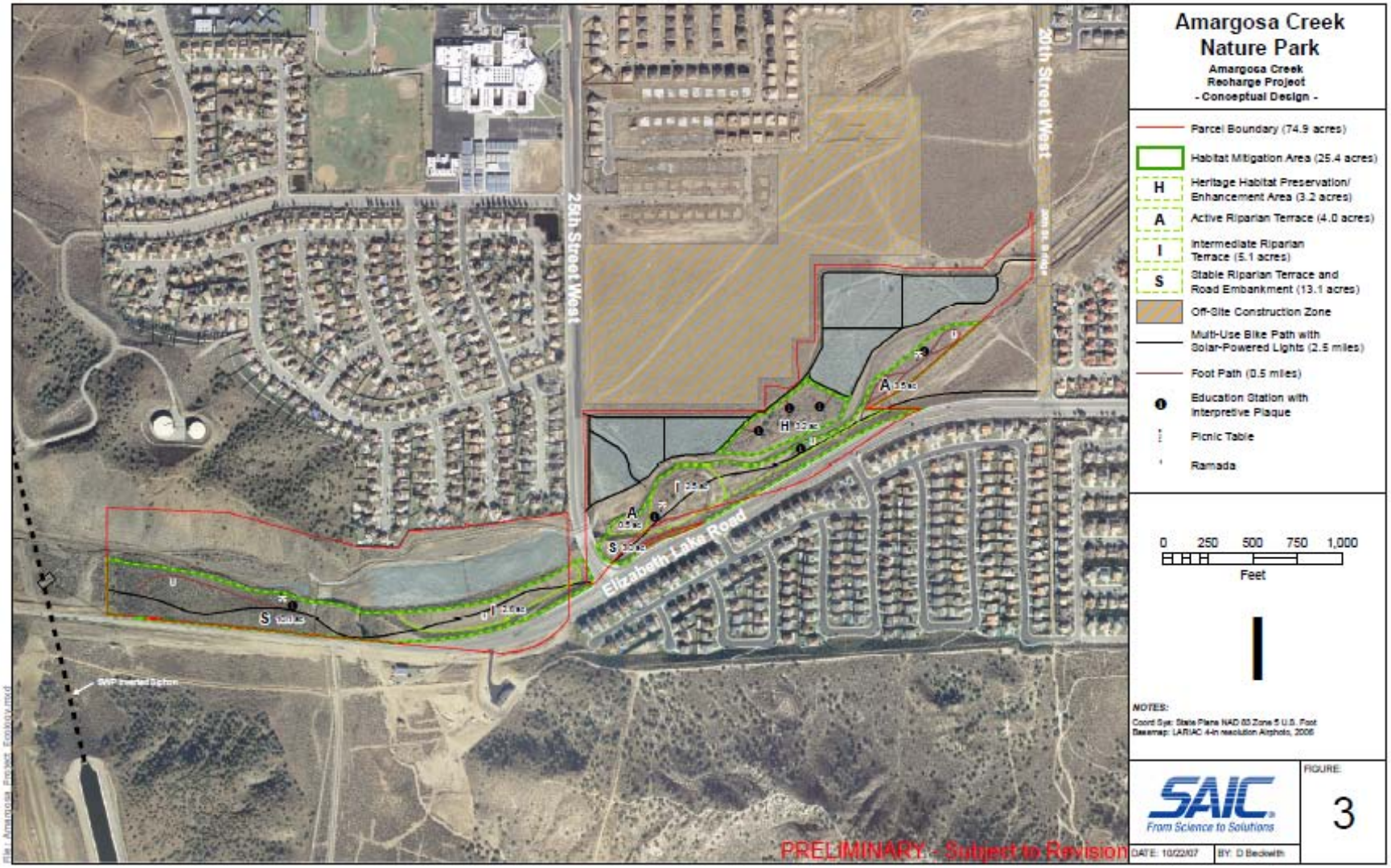
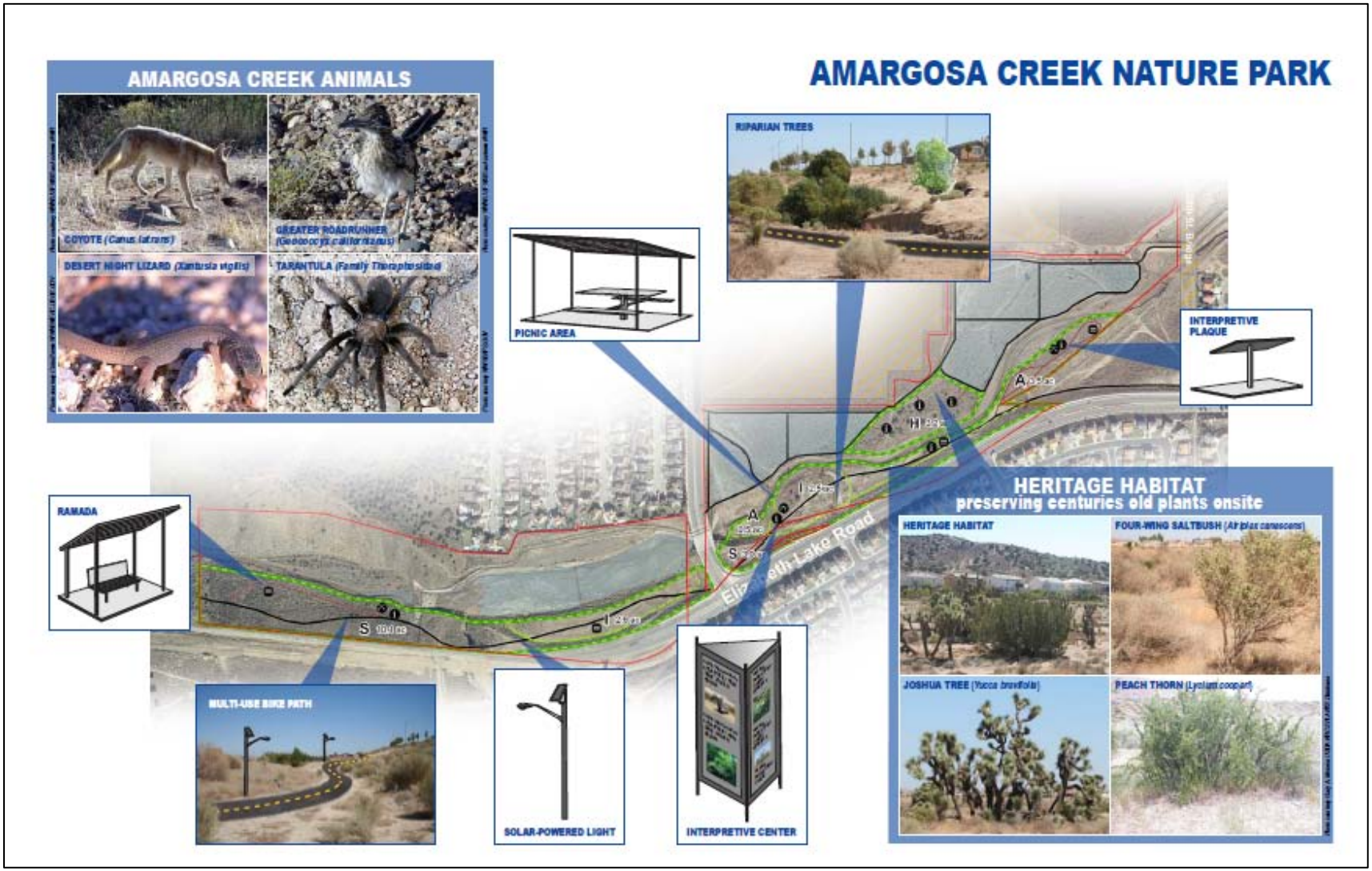


Figure 3-10: Rendering of Amargosa Creek Nature Park



Completed Work

An environmental impact report (EIR) was completed by Science Applications International Corporation (SAIC) in July 2009 for the Amargosa Project. The EIR found the proposed project and all alternatives, including the no project alternative, would result in unavoidable significant impacts to air quality due to greenhouse gas (GHG) emissions during construction or operation. All other impacts were found to be less than significant, either without the need for mitigation or with the application of appropriate mitigation measures. Any mitigation measures will be implemented as necessary. For further details see *Task 6 Environmental Documentation and Task 10 Environmental Compliance/ Mitigation/ Enhancement* in the Work Plan Tasks below. A copy of the EIR report is attached at the end of this attachment. Additionally, a preliminary concept report, percolation reports, siting studies, and other planning documents have been completed for the Amargosa Project, see Task 4 Assessment and Evaluation.

As of February 2011, the City purchased 15 acres of land necessary for construction of the recharge basins and creating habitat/recreational space. Further details can be found in *Section B – Land Purchase Easement* in the Work Plan Tasks below. The City has also applied for water rights from the State Water Resources Control Board (SWRCB) for the stormwater recharge portion of the project. A copy of the Application to Appropriate Water submitted to the SWRCB is attached at the end of this attachment. Lastly, the City has in place Golden State Labor Compliance, LLC (LCD ID: 2003.00071) as their Labor Compliance Program. Golden State Labor Compliance, LLC will be used for the Amargosa Project.

Existing Data and Studies

Reports and studies that have been completed for the Project are:

- A study titled "*Study of Potential Recharge Sites in the Antelope Valley*" was prepared for the Antelope Valley State Water Contractors Association by Stetson Engineers, Inc. in September 2002
- *Amargosa Creek Percolation Demonstration Report* was prepared by SAIC in July 2007
- *Upper Amargosa Creek Concept Report* was prepared by SAIC in January 2008
- *Upper Amargosa Creek Recharge Project Environmental Impact Report* was prepared by SAIC in July 2009
- *Preliminary 20th Street West-Amargosa Creek Improvements Project Report* was prepared by LAN Engineering (now AECOM) in 2007
- *Water Resources Evaluation of Amargosa Creek* was prepared by SAIC in July 2009
- *Antelope Valley Integrated Regional Water Management Plan*, Proposition 50 Round 2, Step 5 Grant Application was prepared by the City and submitted to DWR in 2008

Project Timing and Phasing

Planning and environmental documentation have been completed for this project. Design is expected to start in 2011 (or once grant funds are awarded) and be completed by September 2012, and construction is anticipated to begin by January 2013. This project is not part of a multi-phased project and will be fully functional without implementation of other projects.

Work Plan Tasks

The following sections outline the specific activities that will be performed to implement the Amargosa Project in the *Stormwater Flood Management Grant Program*.

A. Direct Project Administration Costs

Task 1 – Project Administration:

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other administrative activities required to complete design and construction. Four City staff members will be designated for project administration: Project Manager, Director of Public Works, Assistant Director of Public Works/City Engineer, and the Utilities Services Manager. This project will be coordinated by a designated Project Manager employed by the City. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting to the grant agency, and will coordinate with various agencies regarding permitting, environmental, design and construction issues. The Director of Public works will be responsible for negotiating agreements with any partners. The Assistant Director of Public Works/City Engineer is in charge of the program management section [any direct project responsibilities]. The Utilities Services Manager will be responsible for the project design, coordinating with project consultants, agreement coordination, and the operation and maintenance. A detailed breakdown of project labor for each City staff is presented in Table 3-4.

The City will need to negotiate an agreement for establishing the source, quantities, and availability of the SWP water to be recharged, and for funding the implementation items, and for operation and maintenance of the project. This may include preparation of implementation agreements including a Memorandum of Understanding (MOU) or Principles for Agreement with the local entities that have SWP contracts. The Antelope Valley State Water Contractors Association (AVSWCA), as the grant contracting entity, will be the recipient of the grant and act as the grant administrator. The AVSWCA will execute an agreement with the City in order to implement the activities outlined in this proposal. All project administration submittals are listed in Table 3-5.

Table 3-4: Amargosa Project Administration Labor

Project Administration Labor Category	Level of effort (hours)	Status
AFTER September 1, 2011		
Director of Public Works	66	Not started
Assistant Director of Public Works/City Engineer	139	Not started
Utilities Services Manager	972	Not started
Project Manager	734	Not started

Table 3-5: Project Administration Submittals

Project Administration Submittals	Date	Status
AFTER September 1, 2011		
MOU or Principles for Agreement with Local Entities with SWP contracts	Fall 2011	Not started

Task 2 – Labor Compliance Program:

The City hired Golden State Labor Compliance, LLC (LCD ID: 2003.00071) who are approved as a third party labor compliance program provider by the California Department of Industrial Relations. Tables 3-6 and 3-7 provide further details on the labor consulting company and required labor compliance submittals.

Table 3-6: Labor Compliance Program

Labor Category	Status
AFTER September 1, 2011	
Golden State Labor Compliance, LLC	Hired Annually

Table 3-7: Labor Compliance Program Submittals

Labor Compliance Submittals	Date	Status
AFTER September 1, 2011		
Annual Reports	Annually	Not started

Task 3 – Reporting:

The project manager will prepare and submit quarterly and annual progress reports and invoices to the granting agency. The progress reports will describe activities undertaken and accomplishments of each task when milestones are achieved and when any problems are encountered in the performance of the work. A final summary report will be prepared and submitted once the project is completed.

The City will enter into an MOU regarding compliance with Stormwater Flood Management Grant Program requirements and terms of reimbursement payments with the State of California, who would serve as the grantee for the Stormwater Flood Management Grant funding. The MOU between the City and the State of California is anticipated to be completed once grant funding is received in September 2011. Table 3-8 contains a detailed list of all the reporting submittals the City will make to the state.

Table 3-8: List of all Reporting Submittals

Reporting Submittals	Date	Status
AFTER September 1, 2011		
MOU with the City and the State of California	September 2011	Not started
Quarterly, Annual Reports and Invoices	Quarterly	Not started
Final Summary Report at Project Completion	January 2014	Not started

B. Land Purchase Easement

The City purchased 15 acres of Los Angeles County Parcel AIN: 3003-030-018 for a portion of the proposed mitigation and recharge area, see Table 3-9 for further details. The new parcel will be included in the habitat restoration area of the Amargosa Project. The addition of footpaths located near and along 20th Street West, 25th Street West, and Elizabeth Lake Road, will require modifications to the roadways but will not affect right-of-ways along these streets.

Table 3-9: Land Purchases

Land Purchases	Date	Status
BEFORE September 1, 2011		
Land Purchase (AIN: 3003-030-018)	February 2011	Purchase Complete

C. Planning/Design/Engineering/Environmental Documentation

Task 4 – Assessment and Evaluation:

Several technical memoranda covering the Amargosa Project have been produced. These deliverables include design narratives describing the rationale for conceptual engineering design, landscape habitat restoration design, and general project design. Plan view sketches, elevation view sketches, and a table of plant species planned for site-planting zones were included in the technical memoranda. These supporting documents are included in Appendix B of this application.

Planning efforts have also included data collection and field-testing of percolation rates. The data was necessary for sizing of facilities and for construction cost estimates. Data collected included the following:

- **Site topography** - 4-inch resolution Light Detection and Ranging (LIDAR) data in both digital terrain model and digital surface model forms
- **Site Land Use** - 4-inch resolution aerial photo from 2006
- **Precipitation Records** - daily data from ten gauges within a six-mile radius of the Amargosa Creek watershed with complete coverage from the year 1913 forward
- **Surface Water Hydrology** - several United States Geological Survey (USGS) reports and consultant work products have been reviewed and evaluated
- **SWP Supply** - several DWR reports on the availability of SWP supplies historically and projections of future delivery capabilities have been reviewed and evaluated
- **Groundwater Characteristics** - a groundwater percolation test performed on-site, USGS reports, and local boreholes have been reviewed and evaluated.

As part of the project, several reports were completed as well. These reports are listed in **Table 3-10** and summarized below:

- *Study of Potential Recharge Sites in the Antelope Valley,* completed September 2002: This report was completed to determine the preferred groundwater recharge sites in the Antelope Valley. This study was used to determine the recharge sites for the Amargosa Project.
- *Amargosa Creek Percolation Demonstration Report,* completed July 2007: This is a preliminary report of the recharge potential using water percolation near the Amargosa Creek at the 20th Street West Crossing and at the 25th Street West crossing. The report details the results and methodologies used for the percolation demonstration tests.
- *Upper Amargosa Creek Recharge Project Environmental Impact Report (EIR),* completed July 2009: This report discusses environmental resource areas identified in the project's initial study and the project's potential to impact these resources, as required under the CEQA guidelines.
- *Water Resources Evaluation of Amargosa Creek,* prepared completed July 2009: The report evaluates all components of the project and provides detailed descriptions of each project component.
- *20th Street West-Amargosa Creek Improvements Project Report,* completed in 2007: This project report recommends the final CEQA environmental document be approved and provides recommendations on the preferred project alternative.
- *Antelope Valley Integrated Regional Water Management Plan, Proposition 50 Round 2, Step 2 Grant Application,* completed in early 2008: This is an application submitted under Proposition 50

which identifies the key water-related challenges being faced in the Antelope Valley Region along with the projections of how these challenges will change over time.

Table 3-10: List of Studies/Reports Completed

Studies/Reports Completed	Date	Status
BEFORE September 1, 2011		
Study of Potential Recharge Sites in the Antelope Valley	September 2002	Completed
Amargosa Creek Percolation Demonstration Report	July 2007	Completed
Upper Amargosa Creek Recharge Project Environmental Impact Report (EIR)	July 2009	Completed
Water Resources Evaluation of Amargosa Creek	July 2009	Completed
Preliminary 20th Street West-Amargosa Creek Improvements Project Report	April 2007	Completed
Antelope Valley Integrated Regional Water Management Plan, Proposition 50 Round 2, Step 2 Grant Application	January 2008	Completed

Task 5 – Final Design:

A conceptual design report covering the Amargosa project was prepared by SAIC and completed in January 2008. The conceptual design outlines the placement, sizing, and rationale for the flood control elements, planned recharge facilities, riparian habitat restoration areas, and recreational open space. The conceptual design of the recharge facilities includes plan view layouts of primary water collection, conveyance, and storage facilities, inter-basin flow control structures, and general discussion of measurement, operations, and control criteria. The conceptual designs of the Community Park and environmental features describe restoration and enhancement coupled with amenities for public educational and recreational use. The project site covers approximately 75 acres in total, including 20 acres of recharge facilities and 25 acres of habitat restoration. The remaining 30 acre-area includes the Amargosa Creek channel and other open space located north of the creek.

Work on final design plans and specifications will begin in 2011 and is scheduled for completion by September 2012, with interim deliverables proposed as described below. These final design plans will include detailed design criteria for the soilcrete embankments between 20th Street West and 25th Street West. Plans and specifications will be prepared at the 30%, 60%, 90%, and 100% design completion levels. At each stage of completion, the project proponent's staff and outside technical experts will provide technical review and Quality Assurance/Quality Control (QA/QC) of the plans and specifications.

At the 60% design stage, citizen concerns, specified details and construction notes based on 30% plan check comments and other requirements will be identified and incorporated into the design process. Plans will include plan and profile sheets to detail existing utilities, proposed earthen dams layouts, and surveying data. All necessary studies, such as biological assessments, geotechnical investigations, and topographic surveys, will be conducted at this time.

At the 90% design stage, complete design packages will be available for earthen dam construction and operation and permit requirements. A comprehensive copy of the specifications will include front-end documents, technical specifications and details, and special provisions.

Final design and construction documents shall include approved design and specification packages with signatures for construction. Table 3-11 contains a detailed list of all the Amargosa Project submittals that will be made to the state.

Table 3-11: Amargosa Project Design Submittals

Design Submittals	Date	Status
BEFORE September 1, 2011		
Upper Amargosa Creek Concept Report	January 2008	Completed
AFTER September 1, 2011		
30% Design Submittal	November 2011	Not started
60% Design Submittal	February 2012	Not started
90% Design Submittal	June 2012	Not started
100% Design Submittal- Amargosa Project Final Construction Documents	September 2012	Not started

Task 6 – Environmental Documentation:

The Amargosa Project requires compliance with the California Environmental Quality Act (CEQA) as part of the environmental review process and has fulfilled this requirement with the preparation of an EIR, completed in July 2009. The EIR was certified in February 2010 and adopted by the City Council in October 2010. The Site Plan Review (SPR) of the project has yet to be approved. It is anticipated the SPR will be approved by September 2011. Environmental Clearance for the National Environmental Policy Act (NEPA) is not required. Environmental documentation is summarized in Table 3-12.

Table 3-12: Amargosa Project Environmental Documentation

Environmental Documentation	Date	Status
BEFORE September 1, 2011		
Environmental Impact Report (EIR)	July 2009	Complete
Site Plan Review Approval	September 2011	Not yet approved

Task 7 – Permitting:

Permitting information for the Amargosa Project is described in Section G of this attachment.

D. Construction/Implementation

Task 8 – Construction Contracting:

Once the design is complete, and all required permits are procured, the project will be advertised for bidding through standard City procedures. The City will pre-qualify construction contractors using procedures consistent with the Public Contact Code and will hold a pre-bid meeting and respond to questions from contractors. The City will open and review bids for completeness, and award the project to the responsible bidder with the lowest bid in accordance with the Public Contract Code. Once the project has been bid and awarded, the selected contractor will construct the project in accordance with the final plans and specifications. Table 3-13 lists all City construction contracting submittals that will be made to the state.

Table 3-13: Amargosa Project Construction Contracting Submittals

Construction Contracting Submittals	Date	Status
AFTER September 1, 2011		
Complete Contractor Award	January 2013	Not started

Task 9 – Construction/Implementation:

Implementation of this project will occur after initiation of the grant agreement in September 2011.

Materials and/or Design Standards

The Amargosa Project will be designed and constructed in accordance with the appropriate standards, including those from American Society for Testing and Materials (ASTM), American Waterworks Association (AWWA), and other construction industry entities, and appropriate sections of the Health and Safety Code. All California Department of Public Health (CDPH) requirements will be strictly enforced.

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, the Greenbook: Standard Specifications for Public Works Construction, and consistent with the materials used on other regional public works projects.

Construction Tasks

- ***Subtask 9.1 – Mobilization and Site Preparation:***

  Construction will begin with mobilization, which includes moving the required equipment and materials on to the site in preparation for the work scope. The site will be prepared by removing all trash and debris. Non-native brush, trees and plants will be removed from the habitat restoration areas.

- ***Subtask 9.2 – Project Construction:***

  Project construction will include the following:

  - Earthwork: Earthwork includes stripping and stockpiling various types of topsoil, all required excavation and grading, hauling excess material off site, installing water conveyance facilities, installing/constructing soilcrete embankments between 20th Street West and 25th Street West, constructing earthen berms and structures to control flow to the recharge basins, and constructing small earthen dams in the Amargosa channel upstream from 25th Street West.
  - Utilities: This task will include the installation of metering and control of all electrical components.
  - Trees and Shrubs: Native trees, shrubs, and ground cover will be installed as part of this task.
  - Native Plants: Approximately 20,000 native shrubs grown from locally collected seed or cuttings will be planted in the project area; additional areas will be seeded with native species.
  - Pedestrian Paving Surface: A paved pedestrian walkway/bike path will be constructed around the project site.
  - Educational Displays: Installation of approximately ten educational displays depicting Mojave Desert scrub and riparian plants and wildlife, and explaining the challenges of local water resources, water supply infrastructure, channelization projects, recharge projects, and water conservation and recycling projects, among others.

- ***Subtask 9.3 – Performance Testing and Demobilization:***

  A Project Assessment and Evaluation Plan (PAEP) will be prepared to provide a framework for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the SWRCB PAEP guidance document. Additionally, a Monitoring Plan and Quality Assurance Project Plan will be created to develop monitoring procedures and identify the requirements and criteria for field and laboratory

procedures that are required for the Amargosa Project, as construction of the conveyance pipelines and recharge basins will require monitoring of groundwater and/or surface water. All plans will be completed prior to the start of project construction. Table 3-14 lists all the city construction submittals that will be made to the state.

Table 3-14: Amargosa Project Construction Submittals

Construction Submittals	Date	Status
AFTER September 1, 2011		
Project Assessment and Evaluation Plan	December 2012	Not started
Monitoring Plan	December 2012	Not started
Quality Assurance Project Plan	December 2012	Not started

E. Environmental Compliance/Mitigation/Enhancement

Task 10 – Environmental Compliance/Mitigation/Enhancement:

The EIR found the Amargosa Project and all alternatives, including the no project alternative, would result in unavoidable significant impacts to air quality due to greenhouse gas emissions during construction or operation. Though significant GHG emissions would be associated with the Amargosa Project by virtue of a zero threshold for GHG emissions, there are no feasible mitigation measures to reduce GHG emissions sufficiently that the project would not result in some increase in GHGs. With no measures to monitor, no mitigation monitoring program for air quality related impacts is proposed.

All other impacts are considered less than significant, either without the need for mitigation or with the application of appropriate mitigation measures. The categories for mitigation efforts identified by the EIR are listed below:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Noise

All mitigation measures listed above will be in put in place during project construction. For further details on each of the mitigation measures, see the Amargosa Project EIR, staring on page 28 (included as Appendix B).

F. Construction Administration

Task 11 – Construction Administration:

During construction, all staff members previously listed under *Task 1 - Project Administration* will be responsible for overseeing their responsibilities associated with construction of the project. A detailed breakdown of project labor for each City staff for construction administration is presented in Table 3-15. Additionally, the City will hire a qualified engineering consulting firm for construction management services to serve as the representative at the construction site(s) to provide daily on-site observation, coordinate with contractors, review schedules and invoices, and provide inspection services to ensure construction is in compliance with City Standards and other governing Standards. The Chief Public Works Inspector will ensure testing of materials used for construction, including soils and concrete, is conducted,

and will document all activities. The City will compile the major items in the monthly progress reports into quarterly reports to accompany invoices to the state. Table 3-16 lists all construction administration submittals. The City will require the contractor to submit monthly progress reports to accompany each invoice. Construction administration tasks will include the following tasks:

The Project Manager will:

- Oversee all activities associated with the construction of the project
- Oversee review of all technical data, schedules, invoices, change order items, contractual, and financial information for approval
- Attend construction meetings to provide technical support and coordinate with various agencies regarding permitting, environmental, design and construction issues.

The engineering consulting firm that is hired for construction management services will:

- Serve as the City's representative at the construction site
- Coordinate with contractors and agencies
- Review schedules, change orders and invoices
- Provide inspection services to ensure construction is in compliance with City governing standards
- Review technical information
- Provide clarifications to Request of Information
- Provide recommendations to the city project manager on any technical and construction issues

Table 3-15: Amargosa Project Construction Administration Labor

Labor Category	Level of Effort (Hours)	Status
AFTER September 1, 2011		
Director of Public Works	20	Not started
Assistant Director of Public Works/City Engineer	50	Not started
Utilities Service Manager	200	Not started
Chief Public Works Inspector	937	Not started
Project Manger	258	Not started
Consultant	Lump Sum Estimate	Not started

Table 3-16: Amargosa Project Construction Administration Submittals

Construction Administration Submittals	Date	Status
AFTER September 1, 2011		
Quarterly Construction Reports (Includes contractors monthly progress reports & invoices)	Quarterly	Quarterly during construction
Final Construction Report	May 2013	Not started

G. Other Costs

Permitting:

The Amargosa Project will require a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG) for construction of the two temporary check dams within the creek channel, as well as for the soilcrete embankments proposed to reduce the potential for erosion during storm events.

Other anticipated permit requirements may include a "take" permit from CDFG for any impacts to species listed under the California Endangered Species Act that could be located at the site. A biological survey and wetland delineation will be required during 30% design to determine what species are present at the site and whether the "take" permit is necessary. Should wetlands be identified, the City would need to obtain an Army Corps of Engineers (ACE) 404 permit for purposes of filling in waters of the U.S. and a Regional Water Quality Control Board (RWQCB), Lahontan Region Section 401 Water Quality Certification.

A grading permit will be needed from the City's Department of Public Works Engineering Division for grading conducted at the recharge site.

Early consultations as part of the permit process are underway. Table 3-17 provides a detailed list of all permits that will be required for the Amargosa Project.

Table 3-17: Amargosa Project Permitting Submittals

Permitting Submittals	Approval Date	Status
AFTER September 1, 2011		
Army Corps of Engineers (ACE) Section 404 Permit (potential permit, consultation with ACE will determine if needed)	September 2012	Under Process
California Department of Fish and Game Streambed Alteration Agreement	September 2012	Under Process
Regional Water Quality Control Board , Lahontan Region Section 401 Water Quality Certification	September 2012	Under Process
City Grading Permit	September 2012	Under Process

H. Construction/Implementation Contingency

A construction/implementation contingency task is included for this project to cover the anticipated costs of developing and implementing construction-based mitigation measures anticipated to result from completion of *Task 10 - Environmental Compliance/Mitigation/Enhancement*. In additional, this contingency task includes management of unknown conditions that may be encountered during construction or implementation of the project, such as damage to existing utilities within the right-of-way or unearthing of archaeological resources during ground disturbance, and would also cover unexpected design constraints. It is estimated at approximately 10 percent of the total construction costs for the project.